

I claim:

- 1 1. A method for reducing run out of an FDB motor during  
2 servo write, comprising the steps of:  
  
3 increasing the stiffness of the FDB motor's bearings  
4 during servo write; and  
  
5 decreasing the stiffness of the bearing after servo  
6 write.
- 1 2. The method of claim 1 wherein said increasing step  
2 comprises compressing the FDB motor's shaft.
- 1 3. The method of claim 2 wherein said compressing step  
2 comprises applying a compressive load to said shaft.
- 1 4. The method of claim 1 wherein said increasing step  
2 comprises increasing the rotational velocity of the  
3 FDB motor.
- 1 5. The method of claim 1 wherein said increasing step  
2 comprises significantly reducing the temperature of  
3 the FDB motor during servo write so as to increase the  
4 viscosity of the fluid of the FDB's motors bearings.
- 1 6. The method of claim 2 wherein said compressing step  
2 comprises applying a compressive load to the shaft by  
3 a means of a clamping tool abutting each end of the  
4 shaft.
- 1 7. The method of claim 2 wherein said compressing step  
2 comprises an electromagnet mounted at one end of the

3 rotating elements of the FDB motor that operates when  
4 actuated to reduce the gap of at least one of the FDB  
5 motor bearings.

1 8. Apparatus for increasing the stiffness of an FDB motor  
2 during servo write, comprising:

3 an FDB motor bearing having a stiffness; and

4 means for selectively increasing the stiffness of said  
5 bearing.

1 9. Apparatus according to claim 8, wherein said means for  
2 selectively increasing the stiffness of said bearing  
3 comprises:

4 means for selectively providing a compressive load on  
5 the shaft of said FDB motor.

1 10. Apparatus according to claim 9, wherein said means for  
2 providing a compressive load on said shaft comprises:

3 means for selectively clamping each end of said shaft.

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1 11. Apparatus according to claim 8, wherein said means for  
2 selectively increasing the stiffness of said bearing  
3 comprises:

4 electromagnetic means mounted on the rotating elements  
5 of the FDB motor for attracting said rotating

6 elements in an axial direction vis-à-vis the  
7 shaft of FDB motor.

1 12. Apparatus according to claim 8, wherein said means for  
2 selectively increasing the stiffness of said bearing  
3 comprises:

4 electromagnetic means mounted on the rotating elements  
5 of the FDB motor for attracting said rotating  
6 elements in a direction that reduces the gap of  
7 at least one of the FDB motor's bearings.

1 13. Apparatus according to claim 8, wherein said means for  
2 selectively increasing the stiffness of said bearing  
3 comprises:

4 means for selectively reducing the temperature of said  
5 FDB motor to increase the viscosity of the FDB  
6 motor's bearing fluid.

1 14. Apparatus for increasing the bearing stiffness of the  
2 FDB motor during servo write, comprising:

3 a shaft having two ends; and

4 a releasable clamp abutting said two ends.

1 15. Apparatus according to claim 14, further including:

2 a disk drive casing;

3 at least one end of said shaft being mounted on said  
4 casing; and

5       said clamp abuts said casing.

1   16. Apparatus according to claim 12, wherein said  
2       electromagnetic means comprises:

3       an annular steel ring mounted on one axial end of the  
4       rotating elements of said FDB motor;

5       an annular U-shaped ring mounted in a fixed  
6       relationship to said rotating elements and facing  
7       said annular steel ring; and

8       a current bearing coil mounted in said U-shaped ring.

1   17. Apparatus according to claim 16, wherein said U-shaped  
2       ring it is mounted on the casing of a disk drive in  
3       which said FDB motor is mounted.

1   18. The method according to claim 1 wherein said FDB motor  
2       has at least one conical bearing and said method of  
3       increasing the stiffness of said FDB motor bearings  
4       includes selectively reducing the gap of said conical  
5       bearing.

1   19. The apparatus according to claim 8, wherein said means  
2       for selectively increasing the stiffness of said  
3       bearing comprises:

4       at least one conical bearing; and

5       means for selectively reducing the gap of said conical  
6       bearing.

1 20. Apparatus according to claim 14, further comprising:  
2 a rotating element; and  
3 a conical bearing mounted between said shaft and said  
4 rotating element;  
5 wherein said clamp compresses said shaft to reduce the  
6 gap of said conical bearing to thereby increase  
7 the stiffness of said conical bearing.

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